

REVIEW ARTICLE

Effectiveness of nurses and midwives-led psychological interventions on reducing depression symptoms in the perinatal period: A systematic review and meta-analysis

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Abstract

Aim: To evaluate the effectiveness of nurses and midwives-led psychological interventions on the perinatal depressive symptoms.

Design: A systematic review and meta-analysis based on the PRISMA guidelines.

Methods: Six databases were searched, including PubMed, MEDLINE, Cochrane Library, EMBASE, Web of Science and CINAHL. The search date range was before 30 September 2019. We used the Cochrane risk of bias tool to evaluate the quality of the included studies and Review Manager software 5.3 to conduct a meta-analysis. The data were pooled using a random-effect model.

Results: Studies ($N = 827$) were retrieved with 12 studies included. Psychological interventions provided by nurses and midwives have a significant effect on reducing perinatal depressive symptoms (RR: 0.72, 95% CI [0.64–0.82]). Among the approaches of psychological intervention, supportive counselling was the most effective (RR: 0.58, 95% CI [0.42–0.80]). The best intensity of intervention was six to eight sessions (RR: 0.66, 95% CI [0.55–0.79]).

KEYWORDS

depression symptoms, midwives, nurses, perinatal depression, psychological intervention, systematic review

1 | INTRODUCTION

Depression is an important mental health problem which disturbs many women in the perinatal period, approximately 11.9% of women worldwide are affected by perinatal depression (Woody et al., 2017). Perinatal depression refers to major and minor depressive episodes that occur either during pregnancy or within 1 year after delivery

(Roehr, 2013), with adverse short-term and long-term effects on women and children, such as preterm birth, child behavioural disturbance, poor nutrition, loss of interpersonal and financial resources (Gentile, 2017; Kendig et al., 2017; Netsi et al., 2018). Related researches show that many women's lack of awareness of perinatal depression, coupled with a fear of the stigma of depression makes them unwilling to receive treatment (Hadfield & Wittkowski, 2017;

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Hansotte et al., 2017). If appropriate interventions are provided immediately during perinatal care, it may be able to mitigate the negative impact of depression on women and children. There is evidence that early detection and preventive interventions are beneficial for perinatal depression. Nurses and midwives are the primary healthcare providers most frequently contacted by women during the perinatal period and also who has the most opportunities to establish relationships with women, which can make an important contribution to women's mental health.

1.1 | Background

The most effective strategies for managing with perinatal depression include pharmacological interventions and psychotherapy. Some research suggests that, compared with pharmacological therapy, women with perinatal depression prefer psychotherapy because they tend to worry about the side effects of the medical treatment and they also expect the opportunity share their feeling (Dennis & Chung-Lee, 2006; Dimidjian & Goodman, 2009; Hansotte et al., 2017). This reveals the importance of psychological interventions. The most commonly used psychological interventions at present include cognitive behavioural therapy, interpersonal therapy, supportive counselling, behavioural activation, relaxation training, problem-solving treatment and strengthening social supports and psychodynamic therapy (Stephens et al., 2016; WHO, 2016). The United Kingdom (UK) study showed that psychological interventions provided by health visitors have positive clinical effects on reducing post-partum depression symptoms, contribute to reducing the stigma of depression in women and encourages them to seek medical assistance (Brugha et al., 2011).

Despite nurses and midwives being non-professional psychotherapists, according to the Mental Health: Evidence and Research team (MER) at World Health Organization suggested that trained non-professional psychotherapists can provide effective psychological intervention to promote mental health (Saxena et al., 2015). In recent years, enhancing the psychological knowledge and skills of clinical nurses and midwives has been found to reduce the symptoms of depression in the perinatal period. Although previous researches demonstrated psychological interventions provided by nurses and midwives are effective (Glavin et al., 2010; Morrell et al., 2009; Thome et al., 2012), some studies revealed that such interventions have not achieved significant results (Gureje et al., 2019; Morse et al., 2004; Toohill et al., 2014), researchers speculate that this may be affected by the insufficient intensity of psychological interventions and differences in psychological approach or content may also lead to different effects.

Depression symptoms are distressing and difficult experiences for women. The impact of perinatal depression on women is not limited to the physical and psychological dimension but also influences of family and social adaptation (Gentile, 2017; Ng'oma et al., 2019). Existing literature supports that perinatal nurses and midwives can play an important role in alleviating perinatal depression. However, the study results on the effectiveness of psychological intervention

by them are inconsistent. In addition, there is no explicit affirmative of which psychological interventions are the most effective or which degree of intervention intensity would be the most applicable to date. Since nurses and midwives are the primary healthcare providers for women during the perinatal period, it is necessary to provide strong evidence to demonstrate its efficacy.

2 | THE REVIEW

2.1 | Aim

This systematic review and meta-analysis aimed to comprehensively evaluate the existing evidence related to the effectiveness, including different approaches and intensities of psychological interventions provided by nurses/midwives on depressive symptoms in perinatal women. The research question is what are the outcomes of psychological interventions led by nurses and midwives in dealing with perinatal depression?

2.2 | Design

This research was conducted by completing a systematic review of experimental studies reporting nurses and midwives providing psychological interventions in perinatal settings and examining the impact of outcomes of psychological interventions associated with nurses and midwives-led following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Liberati et al., 2009).

2.3 | Search methods

We searched published literature in English as the main from PubMed, MEDLINE, Cochrane Library, EMBASE, Web of Science and CINAHL. The search was limited to the starting date of each database to 30 September 2019. A systematic search strategy was developed using Medical Subject Headings (MeSH) term and key terms: (perinatal OR pregnancy OR antenatal OR prenatal OR postpartum OR postnatal) AND (nurse OR midwife OR health visitor) AND (depress* OR mental health OR mood disorders) AND (psychological intervention OR interpersonal psychotherapy OR cognitive-behavioral OR person-centered OR non-directive supportive OR supportive counseling OR psychological education OR mindfulness). In addition, the reference list of the retrieved papers was also manually searched to identify other potentially eligible studies.

2.3.1 | Participants

Studies were included that examined women in their perinatal period (pregnancy and post-partum up to 1 year), including those at

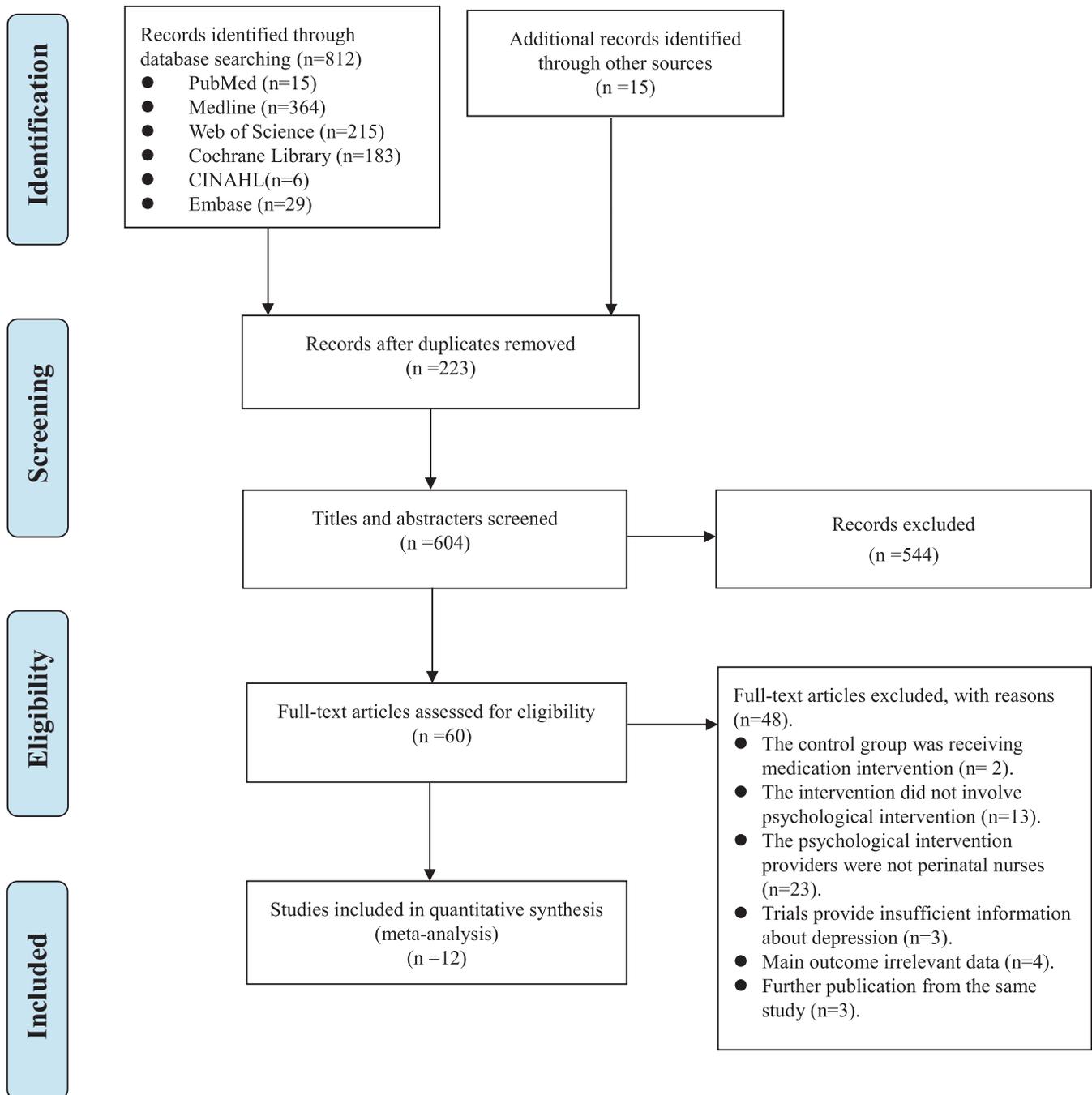


FIGURE 1 PRISMA flow diagram showing the inclusion and exclusion of search results

no known risk and those, were determined to be at risk of perinatal depression.

2.3.2 | Interventions

We designate this review as any type of psychological intervention studies conducted in the field of perinatal care. The setting includes community-based (such as houses, community clinics, prenatal clinics, neonatal clinics and delivery institutions) or involves the setting of hospital departments (for example, obstetric clinic, delivery room,

neonatal room and post-partum ward). Psychological intervention providers in this review must be midwives or health visitors, or nurses related to perinatal care.

2.3.3 | Comparison

We included studies receiving any form of the routine care control group, such as participants received usual care or standard treatment for perinatal depression.

TABLE 1 Summary of the included studies characteristics

| Author, Country | Participants | No. of participants | | Age | Type of intervention | Duration and Number of intervention | Control group | Instrument/ Time of assessments | Main findings |
|---|--|---------------------|-----|------------|---|---|------------------------|---------------------------------|---|
| | | IG | CG | | | | | | |
| Gureje et al. (2019), Nigeria | Women with an EPDS score ≥ 12 at 16–28 weeks of gestation | 379 | 197 | 24.7 (5.7) | Psychological education is provided by midwives | The intervention was divided into two stages, with home visits performed 8 times per week during pregnancy; 8 times 30–45 min per week after delivery | Enhanced Care as usual | EPDS/ Post-natal 6 months | The recovery rate in the intervention group was 70% and the control group was 66%. The odds ratio was 1.12 (95% CI 0.73, 1.72) ^a |
| Morrell et al. (2009), UK | Women with EPDS ≥ 12 at 6 weeks post-partum | 271 | 147 | 30.9 (5.4) | Cognitive behavioural approach and supportive counselling provided by health visitors | Psychological intervention performed weekly one hour in the woman's home for up to eight weeks, starting 8 weeks post-natal | Usual care | EPDS/Post-natal 6, 12 months | At 6 months, compared with the intervention group and the control group, the odds ratio for EPDS scores ≥ 12 was 0.62 (95% CI 0.38–0.95, $p = .028$) ^b . The intervention group had better effects on reducing depression than usual care |
| Brugha et al. (2016), UK | Women with EPDS < 12 weeks of gestation | 103 | 83 | — | Midwives conducted the cognitive behavioural sessions | Provide 3 sessions at 12–34 weeks of pregnancy | Usual care | EPDS/Pregnant 34 weeks | At 34 weeks of pregnancy, the proportion with positive EPDS scores in the intervention group and the usual care was 14/126 and 20/103, respectively |
| Brugha et al. (2011), UK | Women with EPDS score < 12 at 6 weeks post-partum | 1,474 | 767 | 28.7 (5.2) | Cognitive behavioural methods are provided by health visitors | The psychological intervention started 8 weeks after delivery, with one hour of sessions per week and 8 sessions | Usual care | EPDS/Post-natal 6, 12 months | The odds ratio for EPDS ≥ 12 at 6 months was 0.71 (95% CI 0.53–0.97, $p = .031$) ^c for the intervention group women compared with the control group women. The psychological intervention provided by health visitors can significantly reduce the depression symptoms of post-partum women |
| Holden et al. (1989), UK | Women with EPDS ≥ 12 at 6 weeks post-partum | 26 | 24 | 26.2 | Health visitors conducted supportive counselling | In a mean interval of 13 weeks, health visitors provided 8 times of interventions, each for at least 30 min | Usual care | EPDS/ Post-natal 18 weeks | 18 of 26 women in the intervention group had fully recovered, while only 9 of 24 women in the control group recovered. There was a difference of 32% (95% CI 5–58) ^d between groups. 23 (88%) women believed that had a conversation with their health visitors is the most important factor in their recovery |
| Toohill et al. (2014), Australia. | Women who are 20 weeks pregnant | 101 | 97 | 29.1 (5.4) | Psychological education is provided by midwives | During the 24–34 week of pregnancy, 2 sessions are provided over the phone, time the averages are 58 and 45 min, respectively | Usual care | EPDS/Pregnant 36 weeks. | Psycho-education provided by midwives can reduce depression symptoms for pregnant women, however, this improvement was not statistically significant ($p = .38$) ^e |
| Collado et al. (2014), France and Spain | Pregnant women with EPDS score ≥ 12 | 69 | 58 | 29.3 (5.5) | A midwife provides antenatal psychosomatic programming of intervention | Psychosomatic programming of intervention at the clinic 8 weeks from the 20th week of pregnancy to the delivery | Usual care | EPDS/Post-natal 4 weeks | The proportion of positive EPDS scores in the experimental group was 34.3% (24) and in the control group 45.5% (27). There was no significant difference between the two groups ($p = .26$) ^f |

(Continues)

TABLE 1 (Continued)

| Author, Country | Participants | No. of participants | | Age | Type of intervention | Duration and Number of intervention | Control group | Instrument/ Time of assessments | Main findings |
|--|--|---------------------|----|--------------|--|--|---------------------|---------------------------------|---|
| | | IG | CG | | | | | | |
| Prendergast and Austin (2001), Australia | Women with EPDS score > 12 at 12 weeks post-partum | 17 | 20 | 32.2 | Early childhood nurse gives cognitive behavioural approaches | Home visits are provided once a week for a total of 6 weeks after delivery | Ideal standard care | EPDS/Post-natal 18, 24 weeks | Six weeks after treatment, the most significant finding was that the recovery rate of the two groups was high. There was no significant difference in EPDS scores between the two groups ⁵ |
| Ingadóttir and Thome (2006), Iceland | Women with EPDS score ≥ 12 at 9 weeks post-partum | 12 | 10 | 27.1 (5.0) | Public health nurses conduct a cognitive behavioural intervention | Provide 3 times psychological interventions during 9–15 weeks post-partum | Usual care | EPDS/Post-natal 15, 24 weeks | At 15 and 24 weeks after delivery, there was a significant difference in EPDS score between women at experimental compared with control, Mann-Whitney test was respectively $Z = -2.253$, $p < .05$ and $Z = -2.268$, $p < .05$ |
| Morse et al. (2004), Australia | Women with an EPDS score of 10–12 at 6 weeks post-partum | 13 | 10 | 26.8 (3.8) | Supportive counselling by a maternal and child health nurse | Supportive counselling was conducted from 6 weeks–3 months post-partum | Usual care | EPDS/Post-natal 3, 9 months | 54% of women in the intervention group had reduced depression symptoms, while 40% in the control group. No significant difference between the two groups on the overall level of depression symptoms [F (1.36) = 0.651, $p = NS$] ^h |
| Glavin et al. (2010), Norway | Women with EPDS score ≥ 10 at 6 weeks post-partum | 128 | 58 | 32.1 (18–43) | Supportive counselling is given by public health nurses | A 30-min intervention was performed at the clinic from 6 weeks–3 months post-partum, providing a total of 3 times on average | Usual care | EPDS/Post-natal 3, 6 months | At 3 and 6 months post-partum, the numbers in the experimental group improved depression symptoms were significantly more than the control group of women ($p = .01$ and $p = .03$, respectively) ⁱ |
| Thome et al. (2012), Iceland | Women with EPDS score ≥ 12 at 9 weeks post-partum | 43 | 34 | 27.9 (5.0) | The cognitive behavioural approach was performed by public health nurses | Interventions were provided 6 times starting from 9 weeks post-partum | Usual care | EPDS/Post-natal 24 weeks | In week 15 and 24, the experimental group had an average EPDS score of 2.54 points lower than control group ($p = .025$) |

Note: The statistical tests used for the included study.

Abbreviations: CG, Control Group; CI, confidence interval; EPDS, Edinburgh Postnatal Depression Scale; IG, Intervention Group.

^aMixed-effects logistic regression model.

^bGeneralized estimating equations.

^cGeneralized estimating equations.

^dMann-Whitney *U* test.

^eChi-square Test.

^fChi-square Test.

^gUnivariate ANOVA.

^hRepeated measures ANOVA.

ⁱMultiple Regression Analysis.

^jRepeated Measures ANOVA.

2.3.4 | Outcomes

Outcomes of psychological interventions in this review had to be associated with nurses and midwives-led specific to the setting and focus of the assessed research study. We hypothesized identified outcomes include change in depression symptoms which assessed by the Edinburgh Postpartum Depression Scale (EPDS) (Cox et al., 1987), different approaches and intensities of psychological interventions. The positive predictive value of depression symptoms was defined according to the criteria of the country where the trial was conducted (Marshall & Bethell, 2006).

2.3.5 | Study types

Studies using cause and effect relationship design methods include randomized and non-randomized experimental studies with at least one control group. Since this review aims to explore the effectiveness of psychological interventions implemented by primary healthcare providers, we exclude studies that focus on other mental illnesses in addition to perinatal depression. For example, the subjects of the study including hallucinations or other psychotic symptoms, suicidal ideation, current alcoholism, or undergoing any form of psychotherapy would be excluded. We also excluded studies with insufficient data (e.g. abstracts, conference proceedings or protocols) and studies with a one-group pre-test-post-test design.

2.4 | Search outcomes

We initially searched 827 studies and deleted 223 duplicate files. After reviewing the title and abstracts of 604 articles, we selected 60 articles for full-text review. Finally, we determined that twelve studies matched the inclusion criteria. The other 48 trials were excluded as follows: the control group for two trials received medication intervention. Thirteen trials did not involve psychological intervention, the psychological intervention providers in 23 trials were not perinatal nurses, were social workers, research nurses or nursing teachers instead. Three trials did not provide sufficient information and were not suitable for meta-analysis. The main results of four trials were not related to depressive symptoms. Three articles were based on the same study as already included publications. The search results flow for inclusion and exclusion is shown in Figure 1 (Liberati et al., 2009).

2.5 | Quality appraisal

We assessed the quality of included trials with the Cochrane risk of bias tool. The choice of bias risk assessment tool depends on the study design; the first is a revised tool to assess the risk of bias in randomized trials (RoB 2) (Sterne et al., 2019), the second is RoB 2

for cluster-randomized trials and the last is the risk of bias in non-randomized studies of interventions (Sterne et al., 2016). According to the various domains, assessment risk of bias of the Cochrane bias risk tool, the reviewers made judgments of "low risk", "some concerns" or "high risk" on the individual or cluster-randomized trials. The risk of bias judgment of ROBINS-I assessment tool is "low risk", "moderate risk", "serious risk", "critical risk" or "no information".

2.6 | Data abstraction

Data extraction was performed by two reviewers conducting preliminary screening based on titles and abstracts to determine potential studies and reviewing the full text of all trials. Any disagreements between reviewers were resolved through discussions and, if necessary, with the help of corresponding authors.

2.7 | Synthesis

Meta-analysis was performed using Review Manager 5.3 software, and the data were pooled using Mantel-Haenszel's random-effect model. The changes in the degree of depression symptoms after the psychological intervention was determined by calculating the respective risk ratio (RR) and 95% confidence intervals (CI) and the p -value of $<.05$ was considered statistically significant. In addition, the effect modifiers were classified into subgroup analysis to estimate the effect of the various methods and different intensities of psychological interventions on reducing depression symptoms (Deeks et al., 2019). The chi-square test for heterogeneity (Cochran Q test) is used to test for heterogeneity, the p -value of $<.10$ was considered to be significant heterogeneity. The magnitude of heterogeneity can be known through the test of I^2 statistics, when I^2 of 25%, it means low heterogeneity; when I^2 of 50%, it represents moderate heterogeneity; I^2 of 75%, indicates high heterogeneity (Higgins et al., 2003). The funnel chart was used to visualize the publication bias.

3 | RESULTS

3.1 | Summary of the included studies characteristics

All eligible studies were published between 1989–2019, a total of 4,141 women participated (2,636 in the intervention group; 1,505 in the control group). Table 1 describes a summary of the included studies' characteristics; these trials were conducted mainly in the UK, Australia, Norway, Iceland, Nigeria, Spain and France. The average age of the women in the studies was between 26.2–32.2 years. There are four articles on primary care for psychological intervention by midwives (Brugha et al., 2016; Collado et al., 2014; Gureje et al., 2019; Toohill et al., 2014), intervention by public health nurses were the subject of three articles (Glavin et al., 2010; Ingadóttir &

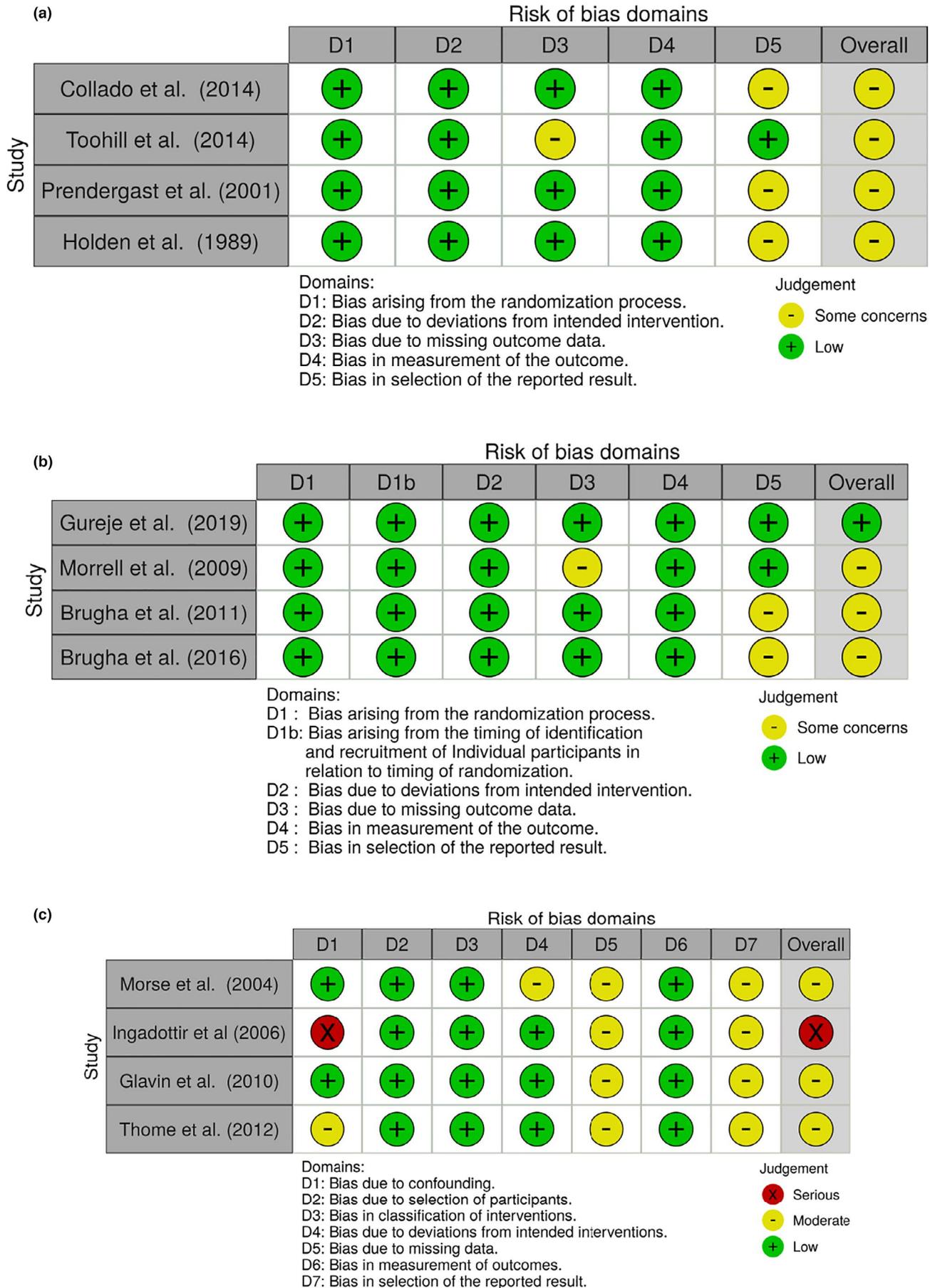


FIGURE 2 (a) Risk of bias graph for individually randomized trials. (b) Risk of bias graph for cluster-randomized trials. (c) Risk of bias graph for non-randomized interventions control studies.

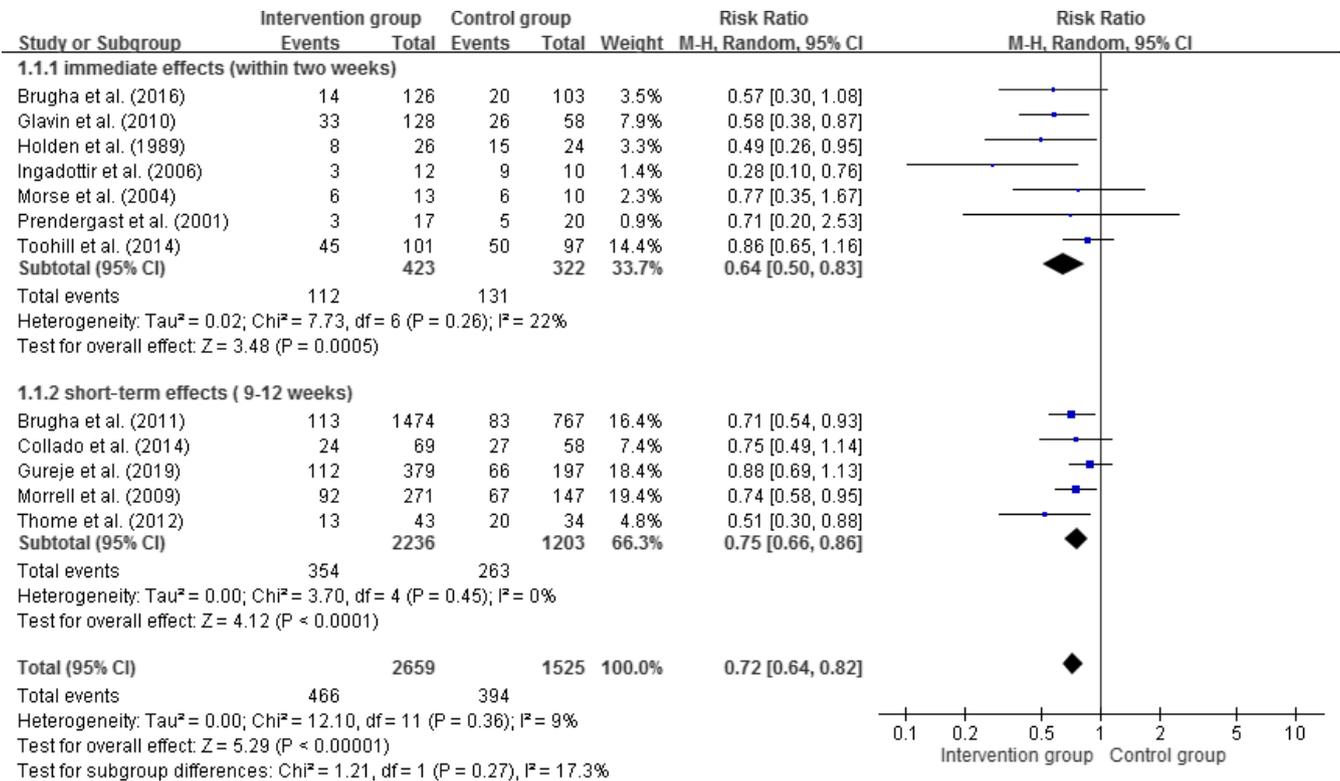


FIGURE 3 Forest plots for comparing the effect of the intervention group and the control group on perinatal depression symptoms

Thome, 2006; Thome et al., 2012) and two articles concerned maternal and child health nurses (Morse et al., 2004; Prendergast & Austin, 2001) and three articles related to health visitors (Brugha et al., 2011; Holden et al., 1989; Morrell et al., 2009). In the UK, all women receive professional community nurse care after delivery, called "health visitors" (Brugha et al., 2011). The different approaches to psychological interventions include four methods. Five studies (45%) investigated cognitive behavioural methods (Brugha et al., 2011, 2016; Ingadóttir & Thome, 2006; Prendergast & Austin, 2001; Thome et al., 2012), three (28%) were about supportive counselling (Glavin et al., 2010; Holden et al., 1989; Morse et al., 2004) and two (18%) related to psychological education (Gureje et al., 2019; Toohill et al., 2014) and one based on psychosomatic therapy (Collado et al., 2014). Most interventions were performed 8–12 weeks after delivery and in the other three studies, it was done in the second and third trimesters. The number of times the main results are assessed varies from trial to trial, with eight trials using multiple following measurements (Brugha et al., 2011; Glavin et al., 2010; Gureje et al., 2019; Ingadóttir & Thome, 2006; Morrell et al., 2009; Morse et al., 2004; Prendergast & Austin, 2001; Thome et al., 2012); four articles were single evaluations (Brugha et al., 2016; Collado et al., 2014; Toohill et al., 2014). All articles used EPDS as an instrument for evaluating PPD, eight trials used EPDS ≥ 12 as the cut point for perinatal depression symptoms (Brugha et al., 2011, 2016; Collado et al., 2014; Gureje et al., 2019; Holden et al., 1989; Ingadóttir & Thome, 2006; Morrell et al., 2009; Prendergast & Austin, 2001; Thome et al., 2012; Toohill et al., 2014),

the other two items were done with EPDS scores ≥ 10 thresholds (Glavin et al., 2010; Morse et al., 2004).

3.2 | Risk of bias assessment

Overall, 8% (1/12) of the included trials were judged as "low risk", 59% (7/12) were "some concerns", 25% (3/12) were "moderate risk" and 8% (1/12) were assessed as "serious risk". We created risk of bias plots according to the risk-of-bias assessment tool used to perform the assessments (McGuinness & Higgins, 2020). In the missing outcome data domain of the randomized trial, six studies reported that the missing outcome data are unlikely to depend on its true value (Brugha et al., 2011, 2016; Collado et al., 2014; Gureje et al., 2019; Holden et al., 1989; Prendergast & Austin, 2001); due to the different proportions of missing outcome data in the intervention group and the comparison group, or reasons for missing outcome data, two articles were judged as "some concerns" (Figure 2a,b) (Morrell et al., 2009; Toohill et al., 2014). Among the four non-randomized controlled interventional trials, two studies were judged as "moderate risk" or "serious risks" because the confounding variables were not appropriately measured and controlled (Ingadóttir & Thome, 2006; Thome et al., 2012). Due to attrition (loss to follow-up), missed appointments or incomplete data collection, putting four non-randomized interventional trials at moderate risk of bias, as shown in Figure 2c (Glavin et al., 2010; Ingadóttir & Thome, 2006; Morse et al., 2004; Thome et al., 2012). Regarding domains of the

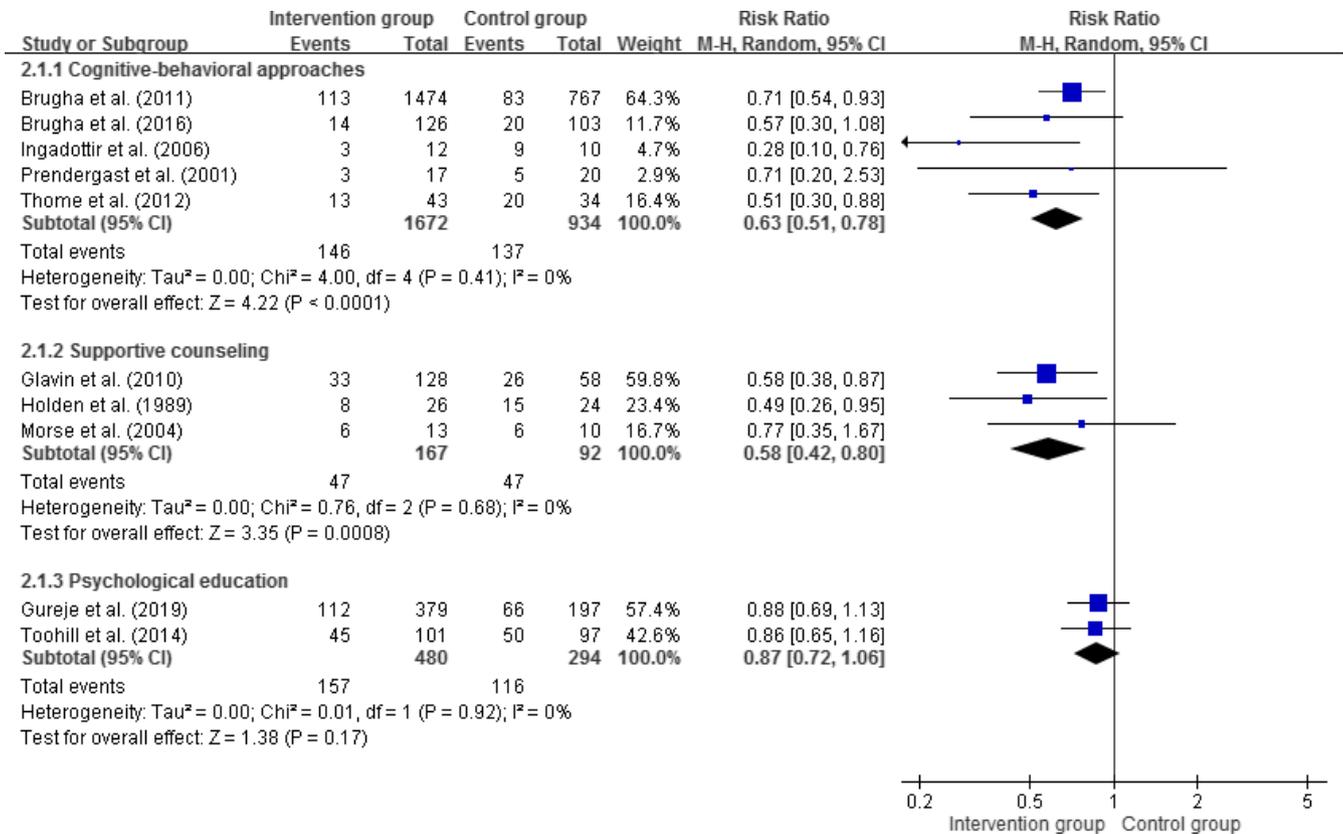


FIGURE 4 Forest plots for comparing the effect of psychological interventions of different types on perinatal depression symptoms

selective reporting bias, most studies (75%) were judged “some concerns and moderate” because they were not pre-registered their protocols. Three trials provided information on the registration trial protocols, and the trials were analysed in accordance with the pre-specified protocols (Gureje et al., 2019; Morrell et al., 2009; Toohill et al., 2014).

3.3 | Effects of psychological interventions

3.3.1 | Effect of nurses and midwives-led psychological intervention on perinatal depression symptoms

The length of follow-up for the included studies was categorized into immediate effects (within 2 weeks) and short-term effects (9–12 weeks) post-intervention. The pooling data show that psychological intervention provided by nurses and midwives has a significant effect on reducing the symptoms of depression during the perinatal period (RR: 0.72, 95% CI [0.64–0.82], I^2 : 9%). More specifically, compared with the control group, the psychological intervention provided by nurses and midwives can reduce depression symptoms within 2 weeks and 9–12 weeks post-intervention by 36% (RR: 0.64, 95% CI [0.50–0.83]) and 25% (RR: 0.74, 95% CI [0.65–0.86]), respectively (Figure 3).

3.3.2 | Effect of different psychological intervention approach on perinatal depression symptoms

The effectiveness of reducing perinatal depression symptoms based on different psychological intervention methods was not the same. Three psychological intervention approaches (cognitive behavioural approaches, supportive counselling and psychological education) were reviewed for the effect of outcome variables. Subgroup results showed that cognitive behavioural approaches (RR: 0.63, 95% CI [0.51–0.78], I^2 : 0%) and supportive counselling (RR: 0.58, 95% CI [0.42–0.80], I^2 : 0%) can lower depression symptoms, yet psychological education for reducing depression symptoms did not yield a significant difference (RR: 0.87, 95% CI [0.72–1.06], I^2 : 0%). Further analysis showed that supportive counselling was the best at improving the symptoms of depression, as shown in Figure 4.

3.3.3 | Effect of the intensity of different psychological interventions on perinatal depression symptoms

Subgroup analysis (Figure 5) showed that when the number of psychological interventions was less than 4 times (RR: 0.70, 95% CI [0.52–0.95], I^2 : 38%) and 6–8 times (RR: 0.66, 95% CI [0.55–0.79],

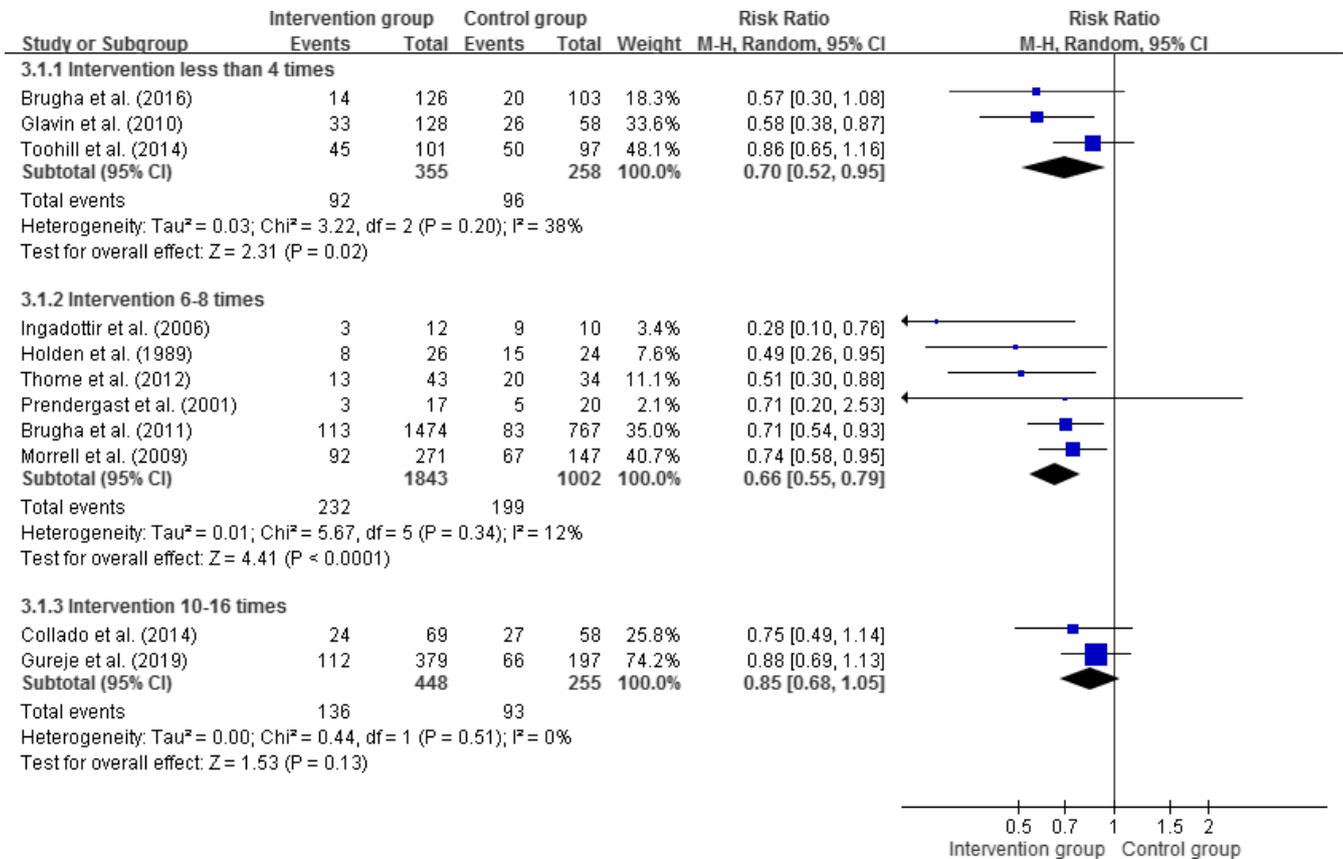


FIGURE 5 Forest plots for comparing the effect of psychological interventions of different intensity on perinatal depression symptoms

I^2 : 12%) the symptoms of depression were significantly reduced. However, psychological intervention intensity of 10–16 times did not have a significant effect (RR 0.85, 95% CI [0.68–1.05], I^2 : 0%).

3.4 | Publication bias

The funnel plot appears asymmetric, which usually suggests publication bias; however, the effect size for all individual studies in the meta-analysis are consistent in their direction (low heterogeneity) which suggests the identified studies really are representative of the population of completed studies in the topic area, not all the studies are “small positive” studies so this also suggests the risk of publication bias is low. Furthermore, the distribution is centred around 0.74 on the horizontal axis, with most studies grouped closely around the RR; this also suggests only low risk of publication bias, as shown in Figure 6.

4 | DISCUSSION

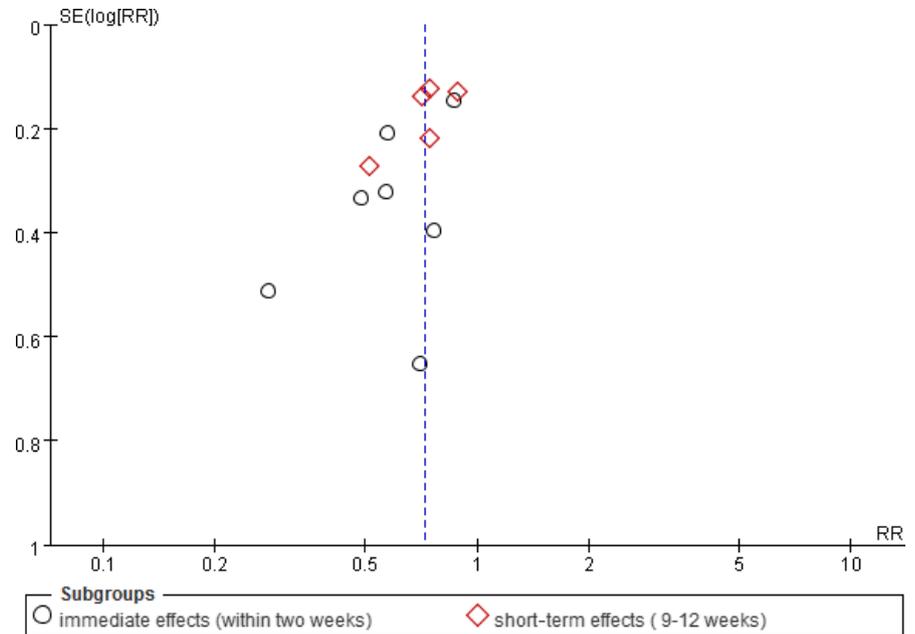
4.1 | Summary of main findings

Our findings from this review show that psychological interventions provided by nurses and midwives can significantly reduce

the severity of perinatal depressive symptoms. Although they are not mental health professionals, after suitable training and with relevant knowledge and skills, nurses and midwives can provide a psychological intervention to effectively reduce the symptoms of perinatal depression. In fact, nurses and midwives are the primary healthcare providers with the most opportunities to contact women during the perinatal period and it is easier for them to detect women's health problems earlier than other professionals. Related research also demonstrates that while providing perinatal care, nurses and midwives not only provide medical services related to childbirth, but also pay attention to women's mental health issues and provide emotional assessment and timely emotional support, which can help increase women's awareness of depression symptoms and reduce depression (Brugha et al., 2011, 2016; Glavin et al., 2010). Therefore, if nurses and midwives are appropriated psychology approach training then primary healthcare providers will be of great help to promote the mental health of women during the perinatal period.

In this review, the trials' effect in reducing the symptoms of perinatal depression was dependent on the different types of psychological intervention which were provided. Previous literature review has shown that psychological interventions performed in primary care can effectively alleviate the immediate and 6-month post-partum depression symptoms of women; no significant differences were found between the different types of therapy (Stephens

FIGURE 6 Funnel plots for comparing the publication bias of nurses and midwives-led psychological interventions



et al., 2016). However, their review articles are limited to the years 2000–2014 and primary care providers include professionals such as social workers or family physicians. Another systematic review discussed the effectiveness of support counselling based on Roger's principle, indicating that support counselling can effectively treat depression in adults (Jacobs & Reupert, 2015). By contrast, we are more focused on what types of psychological interventions are appropriate for nurses and midwives. We found that the psychological intervention approach of supportive counselling is the best with significant and clinically important effects and cognitive behavioural therapy is the next best. One possible explanation is that the roots of supportive psychotherapy come from Karl Rogers (1959, as cited in Morrell et al., 2009) "Client-centred therapy", which usually emphasizes the therapeutic alliance between the provider of psychological intervention and the woman, the provider should show respect to the woman and, allow her to express negative emotions, listen, be close to the current experience of women and respond aggressively so that women feel caring and assistance, which may be a protective effect on the development of depressive symptoms (Hayden et al., 2012; Markowitz, 2014).

According to a longitudinal study in Norway, supportive counselling provided by community public health nurses had good results in reducing depression symptoms (Glavin et al., 2010). The authors point out that nurses' experience in obstetric care helps them understand the needs of perinatal period women which aids the provision of supportive counselling therapy. By building trust relationships and by empathizing with their current experience, the women felt support and comfort, thereby reducing depression symptoms. A similar study was conducted in the UK and the authors assessed the effectiveness of support counselling provided by health visitors to post-partum women. The authors emphasized that this psychological intervention method focuses on establishing a warm therapeutic

relationship with women, which in turn reduces the symptoms of depression and its benefits can continue until 6–12 months post-partum (Morrell et al., 2009). Another British study showed that compared with routine care, the psychological intervention provided by health visitors trained in supportive counselling could effectively reduce depression symptoms (Holden et al., 1989). Consequently, from the results of the meta-analysis, we infer that supportive counselling is the most suitable psychological intervention approach for nurses, midwives and health visitors.

This review showed that 6–8 instances of psychological intervention are optimal to reduce the symptoms of depression. Morrell et al. (2009) conducted a longitudinal cluster-randomized trial on post-partum women with EPDS score ≥ 12 and found that health visitors provided 6–8 psychological interventions for post-partum women, which had good clinical results in reducing depression symptoms. The sample size in this study is twice that of previous studies, so it provides better evidence. An Icelandic study of women with post-partum depression showed that 6 psychological interventions given through 6 months after delivery were very effective in reducing their symptoms (Thome et al., 2012). It is worth noting that providing high-intensity psychological interventions to perinatal period women may not have significant clinical significance. A Nigeria study that compared low-intensity standard care with 16-time high-intensity psychological interventions provided by midwives did not show a significant difference in the proportion of women whose depression symptoms were improved. The author explained that the study methodology, plus the intervention provided by midwives being supervised by non-psychological experts (primary care physicians), and the status of midwives performing the psychological intervention, may have affected the results. Additionally, the natural improvement of depression symptoms over time is also one of the factors to be considered (Gureje et al., 2019).

4.2 | Strengths and limitations

To the best of our knowledge, this is the first meta-analysis that highlights the effectiveness of psychological interventions by nurses and midwives in reducing depression in perinatal women in primary care settings. We also distinguished the types of psychological intervention approaches commonly used by nurses and midwives and confirmed which was the most suitable to use and also summarized the best intensity of psychological intervention. Our conclusions are drawn from the pooling data that provide positive strategies and new practice evidence for the management of depression symptoms during the perinatal period, which can be applied in clinical practice. The advantage of this review was a rigorous and systematic comprehensive search of the literature. Two independent reviewers fully described the inclusion data in the study through the record review process. This review reveals the quality and strength of the current literature evidence.

Despite these advantages, our review has several limitations. First, the articles we included only used self-reported information on depression symptoms and lacked objective data support, so it was impossible to rule out the opportunity of other deviations (Cox et al., 1987). Some studies were inconclusive or had a small sample size (Collado et al., 2014; Holden et al., 1989; Ingadóttir & Thome, 2006; Prendergast & Austin, 2001). Second, in addition to psychological intervention during the treatment, some women used antidepressants in the long-term follow-up, which was also a potential source of bias (Ingadóttir & Thome, 2006; Morrell et al., 2009). Third, most of the included studies without prospectively register their trial protocols and it is not possible to determine they have no risk of selective reporting outcomes. Fourth, missing data were common in included studies and the difference in the proportion of missing result data between the experimental group and the comparison group provides evidence of potential bias. Fifth, only one of the included articles was judged to have a low risk of bias and these methodological weaknesses may weaken the strength of the conclusion. Furthermore, mean and *SD* were not provided in some studies, the insufficient data limited the statistic approach used in this paper and the effectiveness estimate was based on relative risk. We must acknowledge that using the depression scale score to report patients' percentage after the intervention may lose information, which limits the extent to accurate statements in this review.

4.3 | Implications for future research and practice

Nurses and midwives can conduct routine mental health assessments for perinatal women and provide immediate psychological counselling and referrals to help manage the emotional health of women during pregnancy and after delivery. Based on the above limitations, we suggest that future studies need to improve the quality of research design to verify their findings and overcome confounder or missing data through rigorous research design to improve the quality of evidence. It is strongly recommended that all

researchers should register in a public clinical trial for their protocol, which is important for transparency and tracking report, and can also reduce the risk of selective reporting outcomes. Furthermore, we found that most of the articles were conducted in Europe or Australia and we suggest that different countries can also conduct similar research to promote the mental health of women during the perinatal period.

5 | CONCLUSION

Preventing the symptoms of perinatal depression is an important factor in improving maternal and child health. We found that psychological intervention measures provided by nurses and midwives are a good strategy for managing the mental health during the perinatal period and it has positive clinical significance for reducing depression symptoms. Primary care providers can develop psychological intervention plans, can help women's awareness of the symptoms of depression and provide immediate support and psychological counselling. Among the various psychological intervention approaches, we determined that the psychological intervention of supportive counselling is the most suitable method for nurses and midwives. Conducting 6–8 psychological interventions were the best intensity to reduce depression symptoms.

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CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

AUTHOR CONTRIBUTIONS

YLT, TPY, THW, LWP and TYK made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; YLT, TPY and THW involved in drafting the manuscript or revising it critically for important intellectual content; YLT and TPY gave final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content; YLT, TPY, THW, LWP and TYK agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

ETHICAL APPROVAL

Ethical approval was not required because it is a systematic review and meta-analysis.

DATA AVAILABILITY STATEMENT

All data included in this systematic review and meta-analysis are published and accessible to the public. Derivative data supporting

the results of this study can be available from the corresponding authors upon request.

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